1145-VN-2926 Yinqi Chen* (yinqi.chen@uconn.edu), 40 Wilbur cross way, apt 7506, Storrs, CT 06268, and Hieu Nguyen (hiue@msu.edu), Srihita Mediboina (srihitamediboina@gmail.com), Mingyang Zhang (zhangbruin24@g.ucla.edu) and Xiaodi Wang (wangx@wcsu.edu). Option Pricing by Wavelet filtering and Machine learning Based Monte Carlo Method.

Researchers have developed so many accepted models for predicting the option price. The Black Scholes model is the earliest and most popular model both in theory and in practice. As researchers concentrate more on the stochastic volatility as a factor of option pricing, Binomial Tree Model, Monte Carlo Simulation, Support Vector Regression, Neural Networks are used as methods to predict the option price, as well. However, there are some disadvantages in old models. For example, the exercise date is assumed to be the last day, while American options could be exercised before the exercise day. Furthermore, the old models based on limited factors. To gain more accurate results, we need to consider more and weight these factors differently. In this article, we provide a new model by integrating old models such as Monte Carlo simulation using wavelet filtering, support vector regression, and recurrent neural network that can predict the dynamic option price more accurately and compare the results from different models. We selected Apple, Facebook, Netflix, Tesla, and Google as database and focused on the first quarter of 2018. (Received September 25, 2018)